

IN THE CLAIMS

Claims 1-32 (Previously Cancelled)

33. (Currently Amended) A method of supplying to the central nervous system of a patient a peptide that binds an opioid receptor ~~or that interferes with binding of substance P to its receptor~~, comprising:

- (a) obtaining allogenic muscle cells ~~from the patient~~ and preparing an in vitro culture;
- (b) transducing the culture of (a) with DNA encoding the peptide, such that the myogenic cells express the peptide, then
- (c) introducing the transduced myogenic cells as a suspension to a muscle from the patient, the muscle selected from the group consisting of a paraspinal muscle, levator scapulae muscle, muscles close to ~~between~~ laminae IV and V of the spinal cord and neck muscle, so that the peptide is produced in proximity to the spinal cord of the patient.

34. (Currently Amended) The method of claim 33, wherein step (a) comprises the mechanical stimulation of the donor's ~~patient's~~ skeletal muscle tissue to produce a reservoir of satellite ~~myoblast~~ cells myoblasts prior to removal of the satellite cell myoblasts ~~cells~~ for in vitro culture.

35. (Previously Amended) The method of claim 34, wherein the mechanical stimulation is carried out by numerous needle probings or by sonication.

36. (Previously Amended) The method of claim 34, wherein the satellite cells are allowed to develop for about 3 days after mechanical stimulation and before their harvest.

37. (Previously Amended) The method of claim 33, wherein more than 1 billion cells are cultured for administration into the patient.

38. (Previously Amended) The method of claim 33 wherein step (c) comprises injecting the transduced myogenic cells diagonally through muscle fibers.

39. (Previously Amended) The method of claim 33 wherein large chondroitin-6-sulfate proteoglycan is added to the suspension of cells prior to administering the cells to the patient.

40. (Previously Amended) The method of claim 39, wherein large chondroitin-6-sulfate proteoglycan is added to a final concentration of between about 5 micromolar to about 5 millimolar.

41. (Previously Amended) The method of claim 33, wherein insulin is added to the suspension of cells prior to administering the cells to the patient.

42 (Currently Amended) A method of supplying to the central nervous system of a patient a peptide that binds an opioid receptor ~~or that interferes with binding of substance P to its receptor~~, comprising:

(a) obtaining allogenic muscle cells ~~from the patient~~ and preparing an in vitro culture;

(b) transducing the culture of (a) with DNA encoding the peptide, such that the myogenic cells express the peptide, then

(c) introducing at least 1 billion cells from (b) as a suspension into a patient muscle or into a region that contains fat cells.

43. (Currently Amended) The method of claim 42, wherein step (a) comprises the mechanical stimulation of the ~~patient's~~ donor's skeletal muscle tissue to produce a reservoir of satellite cell myoblasts ~~cells~~ prior to removal of the satellite cell myoblasts ~~cells~~ for in vitro culture.

44. (Previously Amended) The method of claim 43, wherein the mechanical stimulation is carried out by numerous needle probings or by sonication.

45. (Previously Amended) The method of claim 43, wherein the satellite cells are allowed to develop for about 3 days after mechanical stimulation and before their harvest.

46. (Previously Amended) The method of claim 42, wherein more than ~~about~~ 10 billion progeny myoblast cells are cultured for administration into the patient.

47. (Previously Amended) The method of claim 42, wherein step (c) comprises injecting the transduced myogenic cells diagonally through muscle fibers.

48. (Previously Amended) The method of claim 42, wherein large chondroitin-6-sulfate proteoglycan is added to the suspension of cells prior to administering the cells to the patient.

49. (Previously Amended) The method of claim 48, wherein large chondroitin-6-sulfate proteoglycan is added to a final concentration of between about 5 micromolar to about 5 millimolar.

50. (Previously Amended) The method of claim 48, wherein insulin is added to the suspension of cells prior to administrating the cells to the patient.

51. (Previously Amended) The method of claim 42, wherein the cells are introduced into a region that contains fat cells.